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12/26/2001

Douglas N. Curry

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05/05/2004

OLIFF & BERRIDGE, PLC
P.O. Box 19928
Alexandria, VA 22320

EXAMINER

DO, ANH HONG

ART UNIT

PAPER NUMBER

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Paper No. 25

Application Number: 10/025,671
Filing Date: December 26, 2001
Appellant(s): CURRY, DOUGLAS N.

MAILED

MAY 05 2004

Technology Center 2600

James A. Oliff
Richard J. Kim
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 2/18/2004.

Art Unit: 2624

(1) *Real Party in Interest*

A statement identifying the real party in interest is contained in the brief.

(2) *Related Appeals and Interferences*

The brief does not contain a statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief. Therefore, it is presumed that there are none. The Board, however, may exercise its discretion to require an explicit statement as to the existence of any related appeals and interferences.

(3) *Status of Claims*

The statement of the status of the claims contained in the brief is correct.

(4) *Status of Amendments After Final*

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) *Summary of Invention*

The summary of invention contained in the brief is correct.

(6) *Issues*

The appellant's statement of the issues in the brief is correct.

(7) *Grouping of Claims*

Appellant's brief includes a statement that claims 1-6, and 8-9 (Group I), 15-17 (Group II), and 13, 14, and 18 (Group III) do not stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

(8) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of Record

5,774,634	HONMA ET AL.	6-1998
6,389,176	HSU ET AL.	5-2002
5,487,172	HYATT	1-1996
6,026,196	SHANNON ET AL.	2-2000

APPLICANT'S DISCLOSURE OF RELATED ART

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-6, 8, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Honma in view of Hsu and Hyatt. This rejection is set forth in prior Office Action, Paper No. 22.

Claims 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Honma in view of the prior art described in the application (PAA) and Hyatt. This rejection is set forth in prior Office Action, Paper No. 22.

Claims 13, 14, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shannon in view of Hyatt. This rejection is set forth in prior Office Action, Paper No. 22.

(11) Response to Argument

* Regarding claims 1-6, 8, and 9, the Appellant contends Hsu and Hyatt fail to overcome the deficiencies of Honma. Especially, the Appellant states Hsu's disclosure

does not relate to discarding pixels in decompressing image data along a direction parallel to an edge.

First, it should be noted that the pre-amble and the step of synthesizing in independent claim 1 do not link together: in the pre-amble, the pixel discarding can be performed in the pre-process of Hsu (pixel decimation, col. 4, lines 5-7) and the pixel maintaining can be performed by Hyatt (col. 206, lines 26-29); in the synthesizing step, one discarded pixel (which can be any discarded pixel, i.e., the pixels in the odd samples) can be represented by the synthesized pixel in the post-process of Hsu (col. 5, lines 51-59).

Second, Hsu also teaches an erosion operation for removing/discarding pixels from boundary of an edge (col. 5, lines 23-25), wherein the erosion operation (i.e., edge extraction) is performed in post-processor (col. 4, lines 35-49) corresponding to a decompressor since it restores the transmitted image to a high-quality image (col. 3, lines 101-5). Further, Hsu discloses a synthesis operation to enhance edge information and reconstruct a high-quality image (col. 3, lines 11-16).

* With respect to the Appellant's argument that Hyatt fails to remove pixels, it should be noted the Hyatt reference is applied to overcome the deficiency of Honma on "maintaining pixels along a direction perpendicular to the edge" as recited in claim 1. The "removing pixels" part has been overcome by Hsu as discussed above. As explaining in the Final Office Action, Hyatt selects pixels along the vertical direction perpendicular to the edge (col. 206, lines 26-29) to improve the edge smoothing (col. 11, lines 32-33) so as to implicitly render high quality images.

Thus, the Hsu and Hyatt clearly cure the deficiencies of Honma with respect to claims 1-6, 8, and 9.

* Regarding claims 15-17, the Appellant again contends that the cited prior art does not teach, suggest, or disclose discarding pixels along a direction parallel to an edge while maintaining pixels along a direction perpendicular to the edge as recited in these claims.

Although Hyatt does not teach using the extra resolution in direction substantially perpendicular to the edge of marks this limitation has been read in the PAA), Hyatt clearly teaches removing real pixels 972, 983, ... along a horizontal direction parallel to an edge while selecting/maintaining pixels along a vertical direction perpendicular to the edge (see Fig. 9J; and col. 206, lines 4-9 and lines 21-34). Hyatt actually removes the pixels 981, 972, and 983 as shown in Fig. 9J, not only changing pixel fill information regarding color information as alleged by the Appellant. Hyatt also relates to decompression (col. 319, lines 62-67).

In addition, although the PAA does not teach discarding pixels along a direction parallel to the edge while maintaining pixels along a direction perpendicular to the edge (this limitation has been overcome by Hyatt), it clearly cures the deficiencies of Honma by teaching providing high spatial resolution data containing non-continuous tone data using extra resolution across edges of marks (specification, page 1, lines 15-25: more spatial resolution needed to render non-continuous tone regions than to render continuous regions).

Thus, the combination of Honma, the PAA, and Hyatt meets all limitations recited in claims 15-17.

* With respect to claims 13, 14, and 18, the Appellant repeatedly contends that Hyatt does not relate to compressing by discarding pixels along a direction parallel to an edge, or to decompressing a single byte of compressed data to produce four pixels of non-continuous tone data, as recited in claim 13.

Although Shannon does not teach discarding pixels along a direction parallel to an edge while maintaining pixels along a direction perpendicular to the edge (this limitation has been read in Hyatt), Shannon clearly teaches "decompressing a single byte of compressed data to produce 4 pixels of non-continuous data" is taught (col. 10, lines 43-46: decompressing the sync byte (i.e., the single byte) by extracting the 4 pixels 0 to 3 therefrom, and these 4 pixels belong to a line of dithered image data (i.e., the line art or the non-continuous tone data)).

In addition, as discussed above, Hyatt clearly teaches removing real pixels 972, 983, ... along a horizontal direction parallel to an edge while selecting/maintaining pixels along a vertical direction perpendicular to the edge (see Fig. 9J; and col. 206, lines 4-9 and lines 21-34). Hyatt actually removes the pixels 981, 972, and 983 as shown in Fig. 9J, not only changing pixel fill information regarding color information as alleged by the Appellant. Hyatt also relates to compression by reducing level of detail in an image edge (col. 310, lines 20-22), and the reduction is performed by removing real pixels 972, 983, ... along a horizontal direction parallel to an edge (col. 206, lines 4-9).

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The Appellant also contends Shannon does not teaches tone information. In contrast, Fig. 9 clearly shows large "soft" areas of light shades and dark tones. Also, Shannon does teach color information as a program accepts pixel color or grayscale DIBs (col. 13, lines 56-58), and the color is till available during the compression and decompression process until it gets to the drive as admitted by the Appellant.

Thus, the combination of Shannon and Hyatt results in the claimed features. For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

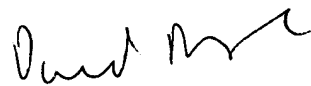
ANH H DO
Primary Examiner
Art Unit 2624



May 3, 2004

Conferees

David Moore



DAVID MOORE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

Wenpeng Chen



OLIFF & BERRIDGE, PLC
P.O. Box 19928
Alexandria, VA 22320